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|-------------------------------|------------------------|---------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 10/071,466 | RIMOLDI ET AL. | |
| | Examiner | Art Unit | |
| | Kandasamy Thangavelu | 2123 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to May 24, 2006.
2. ☒ The allowed claim(s) is/are 1-34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date <u>May 24, 2006</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Introduction

1. This communication is in response to the Applicants' Request for Continued Examination dated May 24, 2006. Claims 1-34 of the application are pending.

Information Disclosure Statement

2. Acknowledgment is made of the information disclosure statements filed on May 24, 2006 together with a list of patents. The patents have been considered.

Reasons for Allowance

3. Claims 1-34 of the application are allowed over prior art of record.
4. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The closest prior art of record shows:

- (1) An efficient, non-centralized method and system for use in computer aided design to achieve synchronous collaborative design by users located at workstations connected by

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network; modifications are made at any workstation, commands are transmitted over the network and interpreted at each work station; the team members may work on the model simultaneously; the CAD system builds the geometry of a model from features, which provide the users a more general way of defining the geometry; the CAD systems use a constraint solver that allows a user to define important functional aspects of a design, and allows the system to calculate other aspects of the design, so that crucial conditions are met; (**Chartier et al.**, U. S. Patent Application 2002/0183878);

(2) A method and system for CAD data exchange for creating boundary representation on a feature-by-feature basis; a parameterized feature from a parametric design is exported from a source CAD system; iterative steps and complimentary extraction techniques are used by one or more processors to create an importable design model of the parameterized feature; by exporting the brep on a per feature basis from the source CAD system, the design intent of a CAD designer is preserved on importation into the target CAD system; the method comprises the steps of: extracting a parameterized feature from a parametric design model; creating a parameterized export version of the feature; classifying the parametric feature with respect to a type of operation represented by the feature; creating a boundary representation of the feature; associating the boundary representation with the export version of the feature for importation into the design model for a target CAD system; the parametric representation and the brep representation are exported to the target CAD system and used to build the CAD model in the target CAD system (**Spitz et al.**, U. S. Patent Application 2003/0176994);

(3) Exchange of data between two distinct CAD systems; the system uses a knowledge base comprising a plurality of match data records, having a source operation region corresponding to source technical system, a target operation region and a computer program configured to retrieve information corresponding to a feature from the source CAD data model; the information represents one or more operations for creating an equivalent feature in a distinct CAD model corresponding to the feature from the source CAD model; the method comprises the steps of: selecting a particular operation from a feature list of a source CAD system; comparing the particular operation to a match record from a database; using the match data record to construct a feature list for the target CAD system (**Rappoport**, U. S. Patent 6,828,963); and

(4) a system and method for concurrently modeling any element of a geometric model; the system includes a first computer having a database in which a number of objects that define the model are stored; the first computer includes means for detecting an update instruction and updating the objects in the database in response to the update instruction; the first computer includes means for outputting a notification to a second computer that the database has been updated; the second computer includes means for loading a number of objects from the database to form corresponding local objects; the local computer further includes means for constructing visual representations from the local model objects and means for editing a visual representation of a local object; the second computer further includes means for instructing the first computer to update the objects stored in its database that corresponds to the local object that was edited; the second computer also includes means for loading into the second computer the updated object in response to the update notification (**Bukowski et al.**, U. S. Patent 6,604,068).

Additional state of the art reviewed and considered by the Examiner is found in U.S. Patent Application 2002/0123812; U.S. Patent Application 2002/0035450; U.S. Patent 6,952,660; U.S. Patent 6,681,145; U.S. Patent Application 2002/0083398; U.S. Patent 6,985,835; U.S. Patent 6,686,914; Chung et al., "Extended variational design technology – foundation for integrated design automation", ACM 1999; and Shih et al., "A design constraint model to capture design intent", ACM, 1997.

None of these references taken either alone or in combination with the prior art of record discloses a method for merging design intent of multiple designers with respect to a digital model of an object, specifically including:

(Claim 1) “analyzing the data concerning the change performed by the first designer and data concerning a digital model version created by a second designer, the analyzing comprising identifying differences between the parameters of the design feature modified by the first designer and parameters of a design feature of the digital model version created by the second designer; and

integrating the change performed by the first designer into the digital model version created by the second designer based on the analyzing”.

None of these references taken either alone or in combination with the prior art of record discloses an apparatus for merging design intent of multiple designers with respect to a digital model of an object, specifically including:

(Claim 17) “a data merger to analyze the data concerning the change performed by the first designer and data concerning a digital model version created by a second designer, the analyzing comprising identifying differences between the parameters of the design feature modified by the first designer and parameters of a design feature of the digital model version created by the second designer, the data merger further to integrate the change performed by the first designer into the digital model version created by the second designer based on the analyzing”.

None of these references taken either alone or in combination with the prior art of record discloses a system for merging design intent of multiple designers with respect to a digital model of an object, specifically including:

(Claim 33) “means for analyzing the data concerning the change performed by the first designer and data concerning a digital model version created by a second designer, the means for analyzing comprising means for identifying differences between the parameters of the design feature modified by the first designer and parameters of a design feature of the digital model version created by the second designer; and

means for integrating the change performed by the first designer into the digital model version created by the second designer based on the analyzing”.

None of these references taken either alone or in combination with the prior art of record discloses a computer readable medium comprising executable instructions which when executed

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on a processing system cause said processing system to perform a method for merging design intent of multiple designers with respect to a digital model of an object, specifically including:

(Claim 34) “analyzing the data concerning the change performed by the first designer and data concerning a digital model version created by a second designer, the analyzing comprising identifying differences between the parameters of the design feature modified by the first designer and parameters of a design feature of the digital model version created by the second designer; and

integrating the change performed by the first designer into the digital model version created by the second designer based on the analyzing”.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance.”

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez, can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2100 Group receptionist: 571-272-2100.

A handwritten signature in black ink, appearing to read 'K. Thangavelu', with a stylized flourish at the end.

K. Thangavelu
Art Unit 2123
July 21, 2006